Repair - Parts

311021U

EN

LineLazer™ IV 200HS Airless Paint Striper

- For application of line stripling materials -

3300 psi (22.8 MPa, 228 bar) Maximum Working Pressure

Important Safety Instructions
Read all warnings and instructions in this manual and in LineLazer, FieldLazer Operation manual. Be familiar with the controls and the proper usage of the equipment. Save these instructions

248870	✔		✔			
248871		✔	✔			
249012	✔			✔		
249013		✔		✔		
248872	✔		✔		✔	
248873		✔	✔		✔	✔

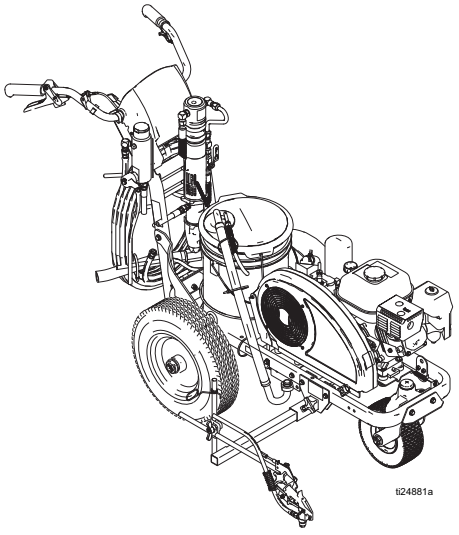
311018

309277

311254

309055

311049



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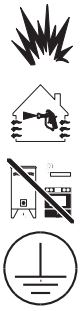
Contents

Warnings 3
Tip Selection 5
General Repair Information 6
Grounding 6
SAE O-Ring Installation 6
Maintenance 7
Pressure Relief Procedure 7
Troubleshooting 8
Digital Tracking System 12
ON/OFF Switch 12
Installation 12
PC Board 12
Installation 12
Pressure Control Transducer 12
Digital Tracking System 13
PC Board Diagnostics 14
Distance Sensor Adjustment 15
Gear Alignment 15
Sensor Height Adjustment 15
Hydraulic Pump 16
Removal 16
Installation 16
Fan Belt 18
Removal 18
Installation 18
Engine 19
Removal 19
Installation 19
Hydraulic Motor Yoke 20
Removal 20
Installation 20
Oil/Filter Change 22
Removal 22
Installation 22
Gallon Counter 22
Removal 22
Installation 22
Displacement Pump 23
Removal 23
Installation 23
Notes 24
Parts - LineLazer IV 200HS 25
Parts Drawing - LineLazer IV 200HS 26
Parts List - LineLazer IV 200HS 27
Parts Drawing - LineLazer IV 200HS 28
Parts List - LineLazer IV 200HS 29
Parts Drawing - LineLazer IV 200HS 30
Parts List - LineLazer IV 200HS 31
Parts Drawing - LineLazer IV 200HS 32
Parts List - LineLazer IV 200HS 33
Parts Drawing - LineLazer IV 200HS 34
Parts List - LineLazer IV 200HS 35
Parts Drawing - LineLazer IV 200HS 36
Parts List - LineLazer IV 200HS 37
Pressure Control Wiring Diagram 38
Technical Data 39
Accessories 39
Graco Standard Warranty 40

Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual or on warning labels, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

⚠WARNING



FIRE AND EXPLOSION HAZARD

Flammable fumes, such as solvent and paint fumes, in **work area** can ignite or explode. To help prevent fire and explosion:

- Use equipment only in well ventilated area.
- Do not fill fuel tank while engine is running or hot; shut off engine and let it cool. Fuel is flammable and can ignite or explode if spilled on hot surface.
- Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static arc).
- Keep work area free of debris, including solvent, rags and gasoline.
- Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present.
- Ground equipment and conductive objects in work area. See **Grounding** instructions.
- Use only grounded hoses.
- Hold gun firmly to side of grounded pail when triggering into pail.
- **Stop operation immediately** if static sparking occurs or you feel a shock**.** Do not use equipment until you identify and correct the problem.
- Keep a fire extinguisher in work area.

CARBON MONOXIDE HAZRD

Exhaust contains poisonous carbon monoxide, which is colorless and odorless. Breathing carbon monoxide can cause death.

- Do not operate in an enclosed area.

SKIN INJECTION HAZARD

High-pressure fluid from gun, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. **Get immediate surgical treatment.**

- Do not spray without tip guard and trigger guard installed.
- Engage trigger lock when not spraying.
- Do not point gun at anyone or at any part of the body.
- Do not put your hand over the spray tip.
- Do not stop or deflect leaks with your hand, body, glove, or rag.
- Follow the **Pressure Relief Procedure** when you stop spraying and before cleaning, checking, or servicing equipment.
- Tighten all fluid connections before operating the equipment.
- Check hoses and couplings daily. Replace worn or damaged parts immediately.

PRESSURIZED EQUIPMENT HAZARD

Fluid from the gun/dispense valve, leaks, or ruptured components can splash in the eyes or on skin and cause serious injury.

- Follow **Pressure Relief Procedure** in this manual, when you stop spraying and before cleaning, checking, or servicing equipment.
- Tighten all fluid connections before operating the equipment.
- Check hoses, tubes, and couplings daily. Replace worn or damaged parts immediately.

⚠WARNING

EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Technical Data** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See Technical Data in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request MSDS from distributor or retailer.
- Do not leave the work area while equipment is energized or under pressure.
- Turn off all equipment and follow the **Pressure Relief Procedure** when equipment is not in use.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
- Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.
- Make sure all equipment is rated and approved for the environment in which you are using it.
- Use equipment only for its intended purpose. Call your distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not kink or over bend hoses or use hoses to pull equipment.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.

BURN HAZARD

Equipment surfaces and fluid that is heated can become very hot during operation. To avoid severe burns:

- Do not touch hot fluid or equipment.

MOVING PARTS HAZARD

Moving parts can pinch, cut or amputate fingers and other body parts.

- Keep clear of moving parts.
- Do not operate equipment with protective guards or covers removed.
- Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the **Pressure Relief Procedure** and disconnect all power sources.

PERSONAL PROTECTIVE EQUIPMENT

Wear appropriate protective equipment when in the work area to help prevent serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. Protective equipment includes but is not limited to:

- Protective eyewear, and hearing protection.
- Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.

RECOIL HAZARD

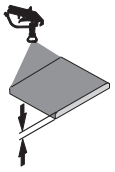
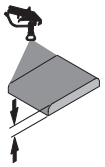
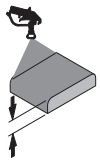
Gun may recoil when triggered. If you are not standing securely, you could fall and be seriously injured.

CALIFORNIA PROPOSITION 65

The engine exhaust from this product contains a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

This product contains a chemical known to the State of California to cause cancer, birth defects or other reproductive harm. Wash hands after handling.

Tip Selection

	in. (cm)	in. (cm)	in. (cm)	in. (cm)			
LL5213*	2 (5)				✔		
LL5215*	2 (5)					✔	
LL5217		4 (10)				✔	
LL5219		4 (10)					✔
LL5315		4 (10)			✔		
LL5317		4 (10)			✔		
LL5319		4 (10)				✔	
LL5321		4 (10)				✔	
LL5323		4 (10)				✔	
LL5325		4 (10)					✔
LL5327		4 (10)					✔
LL5329		4 (10)					✔
LL5331		4 (10)					✔
LL5333		4 (10)					✔
LL5335		4 (10)					✔
LL5355		4 (10)					✔
LL5417			6 (15)		✔		
LL5419			6 (15)		✔		
LL5421			6 (15)		✔		
LL5423			6 (15)			✔	
LL5425			6 (15)			✔	
LL5427			6 (15)			✔	
LL5429			6 (15)			✔	
LL5431			6 (15)				✔
LL5435			6 (15)				✔
LL5621				12 (30)	✔		
LL5623				12 (30)	✔		
LL5625				12 (30)	✔		
LL5627				12 (30)	✔		
LL5629				12 (30)	✔		
LL5631				12 (30)		✔	
LL5635				12 (30)		✔	
LL5639				12 (30)			✔

** Use 100 mesh filter to reduce tip clogs.*

General Repair Information

1 **Keep all screws, nuts, washers, gaskets, and electrical fittings** removed during repair procedures. These parts are not normally provided with replacement assemblies.

2 **Test repair** after problem is corrected.

3 **If sprayer does not operate properly,** review repair procedure to verify procedure was done correctly. If necessary, see Troubleshooting Guide, page 8, for other possible solutions.

4 **Install belt guard before operation** of sprayer and replace if damaged. Belt guard reduces risk of pinching and loss of fingers; see preceding **WARNING.**

Grounding

Ground sprayer with grounding clamp to earth ground when flushing sprayer. Fig. 1.

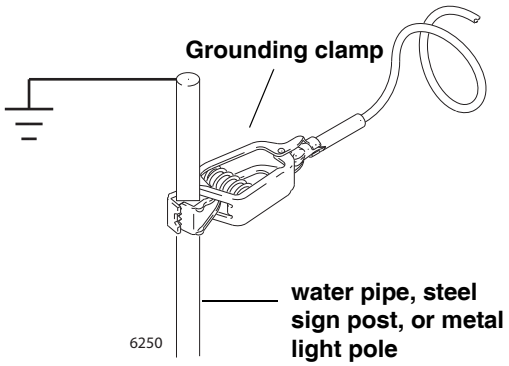
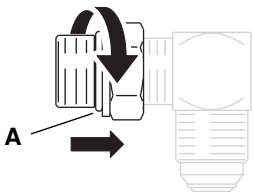


Fig. 1

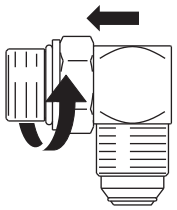
SAE O-Ring Installation

1 Unscrew lock nut to touch fitting.

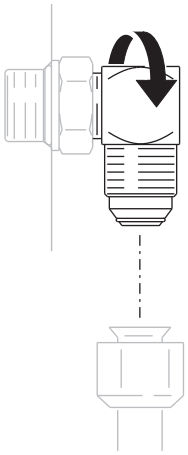
2 Lubricate o-ring (A).



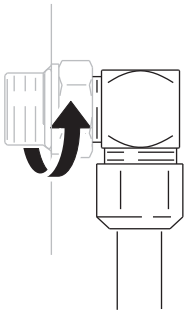
3 Screw in fitting hand tight.



4 Unscrew fitting until oriented prope…y.



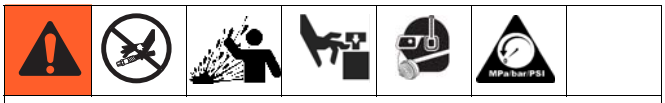
5 Tighten lock nut to indicate torque. (seated properly without pinching o-ring).



Maintenance

Pressure Relief Procedure

Follow the Pressure Relief Procedure whenever you see this symbol.



This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, splashing fluid and moving parts, follow the Pressure Relief Procedure when you stop spraying and before cleaning, checking, or servicing the equipment.

1. Engage trigger lock.
2. Close the bleed-type master air valve.
3. Disengage the trigger lock.
4. Hold a metal part of the gun firmly to a grounded metal pail. Trigger the gun to relieve pressure.
5. Engage the trigger lock.
6. Open all fluid drain valves in the system, having a waste container ready to catch drainage. Leave drain valve(s) open until you are ready to spray again.
7. If you suspect the spray tip or hose is clogged or that pressure has not been fully relieved:
   a. VERY SLOWLY loosen tip guard retaining nut or hose end coupling to relieve pressure gradually.
   b. Loosen nut or coupling completely.
   c. Clear hose or tip obstruction.

NOTICE

Minimum hose size allowable for proper sprayer operation is 3/8 in. x 50 ft.

For detailed engine maintenance and specifications, refer to separate Honda Engine's Owner's Manual, supplied.

DAILY: Check engine oil level and fill as necessary.

DAILY: Check hydraulic oil level and fill as necessary.

DAILY: Check hose for wear and damage.

DAILY: Check gun safety for proper operation.

DAILY: Check prime/spray drain valve for proper operation.

DAILY: Check and fill gas tank

DAILY: Check that displacement pump is tight.

DAILY: Top off TSL level in displacement pump packing nut to help prevent material buildup on piston rod and early wear of packing.

AFTER THE FIRST 20 HOURS OF OPERATION:
Drain engine oil and refill with clean oil. Reference Honda Engines Owner's Manual for correct oil viscosity.

WEEKLY: Remove engine air filter cover and clean element and replace, if necessary. If operating in an unusually dusty environment, check filter daily.

WEEKLY/DAILY: Remove any debris from hydraulic rod.

AFTER EACH 100 HOURS OF OPERATION:
Change engine oil. Reference Honda Engines Owner's Manual for correct oil viscosity.

SEMI-ANNUALLY: Check belt wear, page 18; replace if necessary.

YEARLY OR 2000 HOURS: Replace hydraulic oil and filter element with Graco hydraulic oil 169236 (5 gallon/18.9 liter) or 207428 (1 gallon/3.8 liter) and filter element 246173; page 22.

SPARK PLUG: Use only BPR6ES (NGK) or W20EPR--U (NIPPONDENSO) plug. Gap plug to 0.028 to 0.031 in. (0.7 to 0.8 mm). Use spark plug wrench when installing and removing plug.

Caster Wheel
(See letter call-outs in Parts drawing on page 36)

1. Once each year, tighten nut (127, Detail A) until spring washer bottoms out. Then back off the nut 1/2 to 3/4 turn.
2. Once each year, tighten nut (127) until it beings to compress spring washer. Then tighten the nut an additional 1/4 turn.
3. Once each month, grease the wheel bearing (F).
4. Check pin (55) for wear. If pin is worn out, there will be play in the caster wheel. Reverse or replace the pin as needed.
5. Check caster wheel alignment as necessary. To align: loosen screw (145), align wheel and tighten bolt.

Troubleshooting

Problem	Cause	Solution
E=XX is displayed	Fault condition exists	Determine fault correction from table, page 14.
Gas engine pulls hard (won't start)	Hydraulic pressure is too high	Turn hydraulic pressure knob counterclockwise to lowest setting.
Engine won't start	Engine switch is OFF	Turn engine switch ON
	Engine is out of gas	Refill gas tank. Honda Engines Owner's Manual.
	Engine oil level is low	Try to start engine. Replenish oil, if necessary. Honda Engines Owner's Manual.
	Spark plug cable is disconnected or damaged	Connect spark plug cable or replace spark plug
	Cold engine	Use choke
	Fuel shutoff lever is OFF	Move lever to ON position
	Oil is seeping into combustion chamber	Remove spark plug. Pull starter 3 to 4 times. Clean or replace spark plug. Start engine. Keep sprayer upright to avoid oil seepage.
Engine operates, but displacement pump does not operate	Pump valve is OFF	Turn pump valve ON.
	Pressure setting is too low	Turn pressure adjusting knob clockwise to increase pressure. Manual 311018.
	Fluid filter (11) is dirty	Clean filter.
	Tip or tip filter is clogged	Clean tip or tip filter. Manual 311254
	Displacement pump piston rod is stuck due to dried paint	Repair pump. Manual 309277
	Belt worn, broken or off pulley	Replace.
	Hydraulic fluid too low	Shut of sprayer. Add fluid*
	Hydraulic motor not shifting	Set pump valve OFF. Turn pressure down. Turn engine OFF. Pry rod up or down until hydraulic motor shifts.
Displacement pump operates, but output is low on upstroke.	Piston ball is not seating	Service piston ball. Manual 309277.
	Piston packings are worn or damaged.	Replace packings. Manual 309277.

* Check hydraulic fluid level often. Do not allow it to become too low. Use only Graco approved hydraulic fluid, page 7.

Problem	Cause	Solution
Displacement pump operates but output is low on downstroke and/or on both strokes.	Strainer (34a) is clogged	Clean strainer.
	O-ring in pump is worn or damaged.	Replace o-ring. Manual 309277.
	Intake valve ball is packed with material or is not seating properly.	Clean intake valve. Manual 309277.
	Engine speed is too low.	Increase throttle setting. Manual 311018.
	Suction tube air leak.	Tighten suction tube.
	Pressure setting is too low.	Increase pressure. Manual 311018.
	Fluid filter (11), tip filter or tip is clogged or dirty.	Clean filter. Manual 311018 or 311254.
	Large pressure drop in hose with heavy materials.	Use larger diameter hose and/or reduce overall length of hose. Use of more than 100 ft of 1/4 in. hose significantly reduces performance of sprayer. Use 3/8 in. hose for optimum performance (50 ft minimum).
Pump is difficult to prime	Air in pump or hose	Check and tighten all fluid connections. Reduce engine speed and cycle pump as slowly as possible during priming.
	Intake valve is leaking.	Clean intake valve. Be sure ball seat is not nicked or worn and that ball seats well. Reassemble valve.
	Pump packings are worn	Replace pump packings. Manual 309277
	Paint is too thick	Thin the paint according to the supplier's recommendations.
	Engine speed is too high	Decrease throttle setting before priming pump. Manual 311018
High engine speed at no load	Mis-adjusted throttle setting	Reset throttle to 3700 - 3800 engine rpm at no load
	Worn engine governor	Replace or service engine governor
Low stall or run pressure shown on display	New pump or new packings	Pump break-in period takes up to 100 gallons of material
	Faulty transducer	Replace transducer
Excessive paint leakage into throat packing nut	Throat packing nut is loose	Remove throat packing nut spacer. Tighten throat packing nut just enough to stop leakage.
	Throat packings are worn or damaged	Replace packings. Manual 309277
	Displacement rod is worn or damaged	Replace rod. Manual 309277
Fluid is spitting from gun	Air in pump or hose	Check and tighten all fluid connections. Reprime pump. Manual 311018
	Tip is partially clogged	Clear tip. Manual 311254
	Fluid supply is low or empty	Refill fluid supply. Prime pump. Manual 311018. Check fluid supply often to prevent running pump dry.
Excessive leakage around hydraulic motor piston rod wiper	Piston rod seal worn or damaged	Replace these parts

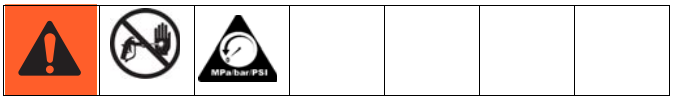
Problem	Cause	Solution
Fluid delivery is low	Pressure setting too low	Increase pressure. See manual 311018
	Displacement pump outlet filter (if used) is dirty or clogged	Clean filter
	Intake line to pump inlet is not tight	Tighten
	Hydraulic motor is worn or damaged	Bring sprayer to Graco distributor for repair
	Large pressure drop in fluid hose	Use larger diameter for shorter hose
The sprayer overheats	Paint buildup on hydraulic components	Clean
	Oil level is low	Fill with oil, page 7.
Excessive hydraulic pump noise	Low hydraulic fluid level	Shut off sprayer. Add fluid*, page 7.
Gallon counter not working	Broken or disconnected wire	Check wires and connections. Replace broken wires.
	Bad sensor	Replace sensor
	Missing or damaged magnet	Replace magnet. Locate in correct spot.
Sprayer operates, but display does not	Bad connection between control board and display	Remove display and reconnect
	Display damaged	Replace display
	Loose cables	Connect cables to back of control board
	Control board LED not flashing	Replace control board
Distance counter not operating properly	Trigger sensor not set correctly	See “Spray icon does not show on display when fluid is sprayed”
	Bad wiring connections	Check connector, and reconnect
	Distance sensor not spaced correctly from gear	Adjust space between sensor and gear to 0.50 -/+ .020 in. (page 15).
	Distance and gear not aligned	Remove tire, and press in or pull out gear to align sensor and gear.
	Gear teeth missing or damaged	Replace distance gear/wheel
	Wire cracked or broken	Replace sensor
Mils not calculating	Distance sensor	See “Distance counter not operating properly”
	Trigger sensor	See “Spray icon does not show on display when fluid is sprayed”
	Gallon counter	See “Gallon counter not working”
	Bad or damaged control board	Replace control board
Fluid spray starts after spray icon is shown on display	Interrupter (164) is improperly positioned	Turn screw counterclockwise until spray icon synchronizes with fluid spray.
Fluid spray starts before spray icon is shown on display	Interrupter (164) is properly positioned	Turn screw clockwise until spray icon is synchronized with fluid spray

Problem	Cause	Solution
Spray icon does not show on display when fluid is sprayed	Loose connector	Check that 5-pin connector and reed switch are properly connected.
	Interrupter (164) is improperly positioned	Turn screw counterclockwise until spray icon synchronizes with fluid spray
	Reed switch assembly (18) is damaged	Replace reed switch assembly (18)
	Magnet on assembly (18) is missing	Replace reed switch assembly (18)
	A connector on wiring harness or on reed switch (18) is damaged	Disconnect reed switch and 5-pin connector from back of control board. Check continuity between pin 1 on 2-pin connector and pin 1 and 5-pin connector. Check continuity between 2 on 2-pin connector and pin 4 on 5-pin connector. If there is no continuity in either case, replace wiring harness. If there is continuity in both cases, replace reed switch assembly (18).
	Cut or sliced wire	Replace wiring harness.
	Control board is damaged	Replace control board
	Display is damaged	Replace display
Spray icon is always shown on display	Interrupter (164) is improperly positioned	Turn screw clockwise until spray icon is synchronized with fluid spray
	Reed switch assembly (18) is damaged	Replace reed switch assembly (18)
Pressure control knob does not rotate	Knob is jammed	Pull back cover where remote cable connects to hydraulic pump and turn counterclockwise until free
Pressure control knob rotates freely with no pressure change	Remote cable broken or disconnected	Replace or reconnect cable
Engine bounces when striping	Spring is broken, loose or missing	Replace or reconnect spring

Digital Tracking System

ON/OFF Switch

Removal



1 Relieve pressure, page 7.

2 Fig. 2. Remove screws (103) and front cover (31).

3 Pull display connector wings (A) open on PC board and pull display connector out.

4 Disconnect ON/OFF switch connector (B) from PC board.

5 Press in on two retaining tabs on each side of ON/OFF switch (15g) and remove switch.

Installation

1 Fig. 2. Install new ON/OFF switch (15g) so tabs of switch snap into place on inside of pressure control housing.

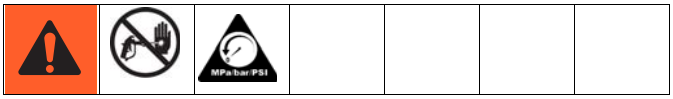
2 Connect ON/OFF switch connector (B) to PC board.

3 Push display connector into PC board and close display connector wings (A) on PC board.

4 Install cover (31) with two screws (103).

PC Board

Removal



1 Relieve pressure, page 7.

2 Fig. 2. Remove two screws (103) and cover (31).

3 Pull display connector wings (A) open on PC board and pull display connector out.

4 Note on paper, lead connections to the control board. Disconnect leads from control board (15d).

5 Remove four screws (15k) from control board.

Installation

1 Fig. 2. Install control board (15d) and four screws (15k). Torque to 105-115 in-lb.

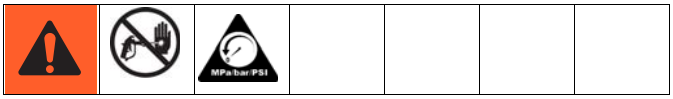
2 Connect leads to control board. (Refer to note on lead connections.)

3 Push display connector into PC board close display connector wings (A) on PC board.

4 Install cover (31) with two screws (103).

Pressure Control Transducer

Removal



1 Relieve pressure, page 7.

2 Fig. 2. Remove two screws (103) and cover (31).

3 Disconnect transducer lead (C) from control board (15d).

4 Remove pressure control transducer (259) and o-ring (124) from filter housing.

Installation

1 Fig. 2. Install o-ring (124) and pressure control transducer (259) in filter housing. Torque to 35-45 ft-lb.

2 Connect transducer lead (C) to motor control board (15d).

3 Install cover (31) with two screws (103).

Digital Tracking System

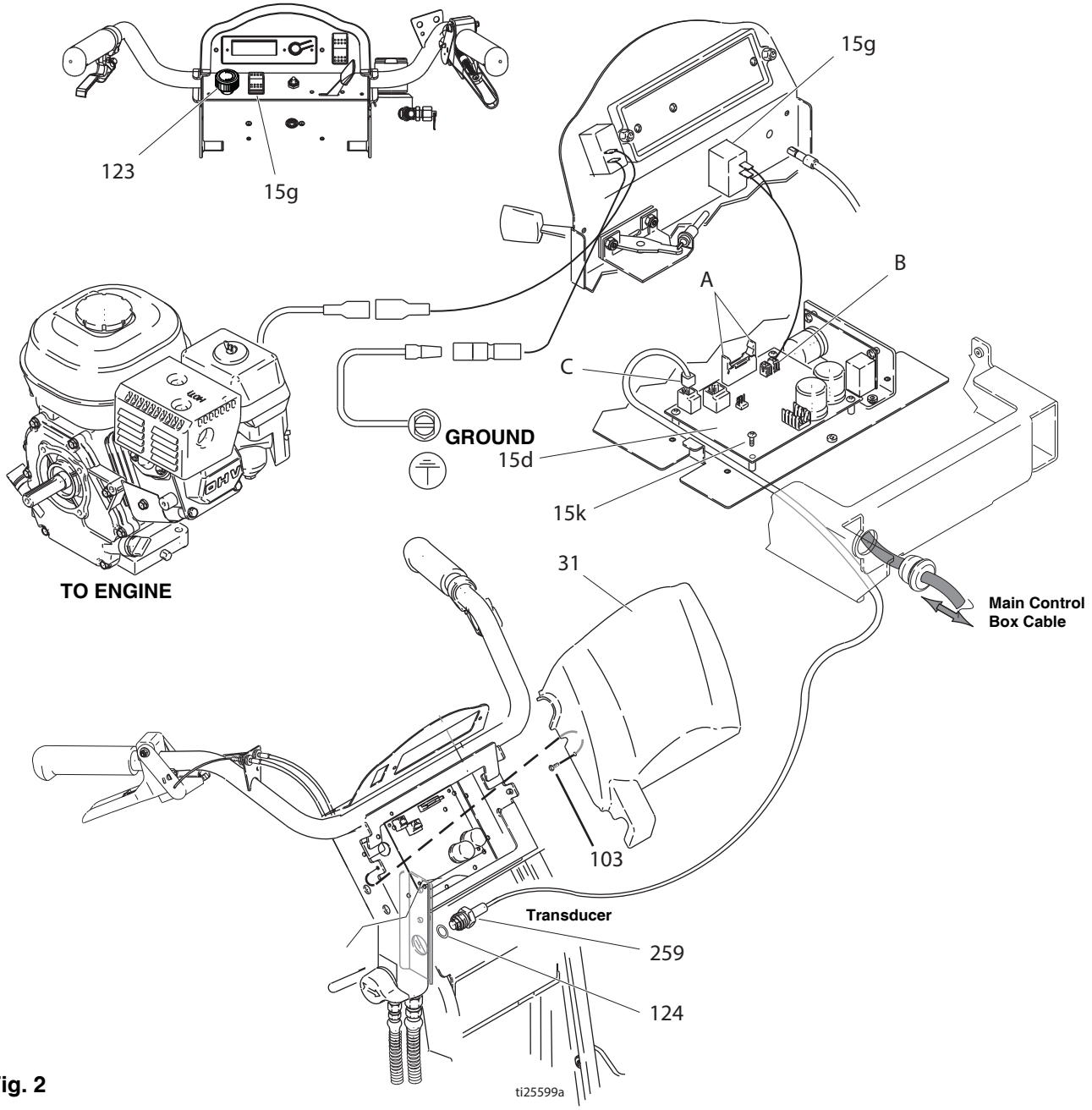
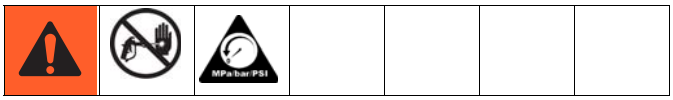


Fig. 2

PC Board Diagnostics



Relieve pressure before repair; page 7. No display does not mean the sprayer is not pressurized.

Digital Display Messages

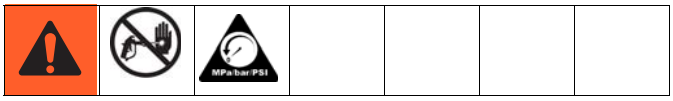
DISPLAY	SPRAYER OPERATION	INDICATION	ACTION
No Display	Sprayer may be pressurized	Loss of power or display not connected	Check power source. Relieve pressure before repair or disassembly. Verify display is connected.
- - - -	Sprayer may be pressurized	Pressure less than 200 psi (14 bar, 1.4 MPa)	Increase pressure as needed.
3000 psi 210 bar 21 MPa	Sprayer is pressurized. Power is applied. (Pressure varies with tip size and pressure control setting).	Normal operation	Spray
E-02	Engine and system continue to run.	Exceeded pressure limit	Remove any filter clogs or flow obstructions
E-03	Engine and system continue to run.	Pressure transducer faulty, bad connection or broken wire.	Check transducer connections and wire. Replace transducer or control board, if necessary.

After a fault, follow these steps to restart sprayer:

1. Correct fault condition
2. Turn sprayer OFF
3. Turn sprayer ON

Distance Sensor Adjustment

Gear Alignment



1 Relieve pressure, page 7.

2 Fig. 3. Remove dust cap (142) from wheel. Remove nut (127).

3 Remove wheel (120) from LineLazer.

4 Align gear (67) with sensor.

   a. Pull gear out from wheel with gear puller.

   b. Push gear in toward wheel with mallet.

5 Install wheel (120) on LineLazer.

6 Install nut (127) until tight, then back off 1/4 turn. Install dust cap (142) on wheel.

Sensor Height Adjustment

1 Remove wheel (120) from LineLazer.

2 Remove distance sensor (66).

3 Adjust sensor assembly height with two 17 mm nuts of sensor so bottom surface of sensor is 0.638 +/- 0.020 from bottom surface of shield. Torque to 8 +/- 2 in-lb.

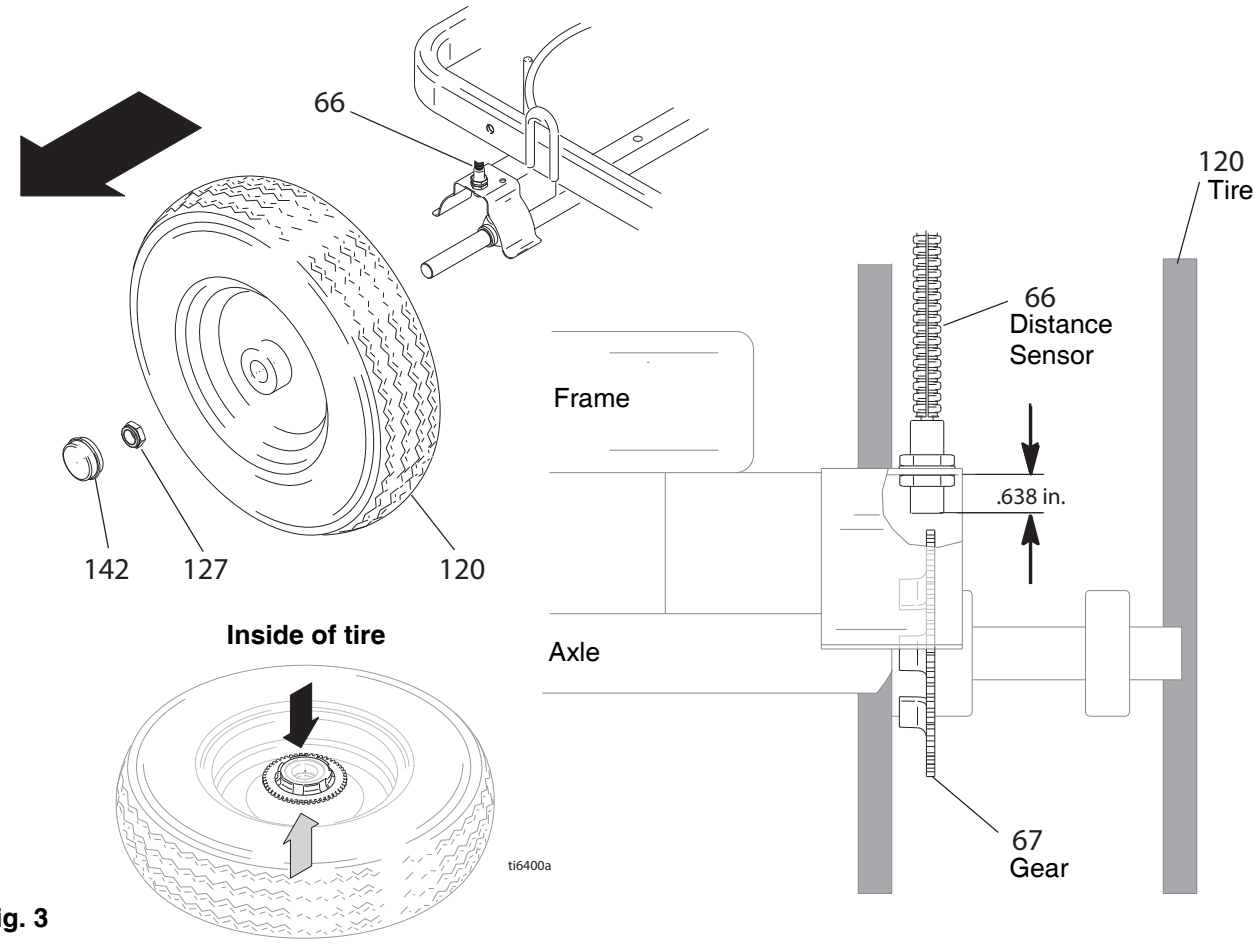


Fig. 3

Hydraulic Pump

Removal

1 Allow hydraulic system to cool before beginning service.

2 Relieve pressure; page 7.

3 Place drip pan or rags under sprayer to catch hydraulic oil that leaks out during repair.

4 Remove drain plug (195) and oil filter (199) and allow hydraulic oil to drain.

5 Remove screw (224), loosen belt guard knob (241) and belt guard (24).

6 Raise motor and remove belt (143).

7 Remove two set screws (169) and fan pulley (86).

8 Remove case drain tube (251).

9 Remove elbow (182).

10 Loosen screw (184) and remove pressure control guard (63).

11 Loosen set screw (102) and remove remote pressure control cable (12).

12 Remove eight screws (184) and washers (101), reservoir cover (237), filter assembly (A) and gasket (85).

13 Remove four screws (215) and o-rings (178), o-ring (180) and hydraulic pump (252) from reservoir cover (237).

Installation

1 Install hydraulic pump (252) on reservoir cover (237) with four screws (215).

2 Install gasket (85) filter assembly (A) and reservoir cover (237) with eight washers (101) and screws (184); torque 90 in-lb (10 N·m).

3 Install elbow (182) per instructions, page 6; torque to 15 ft-lb (20.3 N·m).

4 Install pressure control guard (63) and tighten screw (184).

5 Connect hydraulic hoses (32) and (35).

6 Install case drain tube (251); torque to 15 ft-lb (20.3 N·m).

7 Install fan pulley (86) with two set screws (193).

8 Raise motor and install belt (143).

9 Install remote pressure control cable (12). Tighten set screw (102).

10 Install remote pressure control cable (12). Tighten set screw (102).

11 Install drain plug (195); torque to 110 in-lb (12.4 N·m). Install oil filter (199); tighten 3/4 turn after gasket contacts base. Fill with Graco hydraulic oil, page 7.

12 Start up and allow pump to operate at low pressure for approximately 5 minutes to purge all air.

13 Check and top off hydraulic oil level.

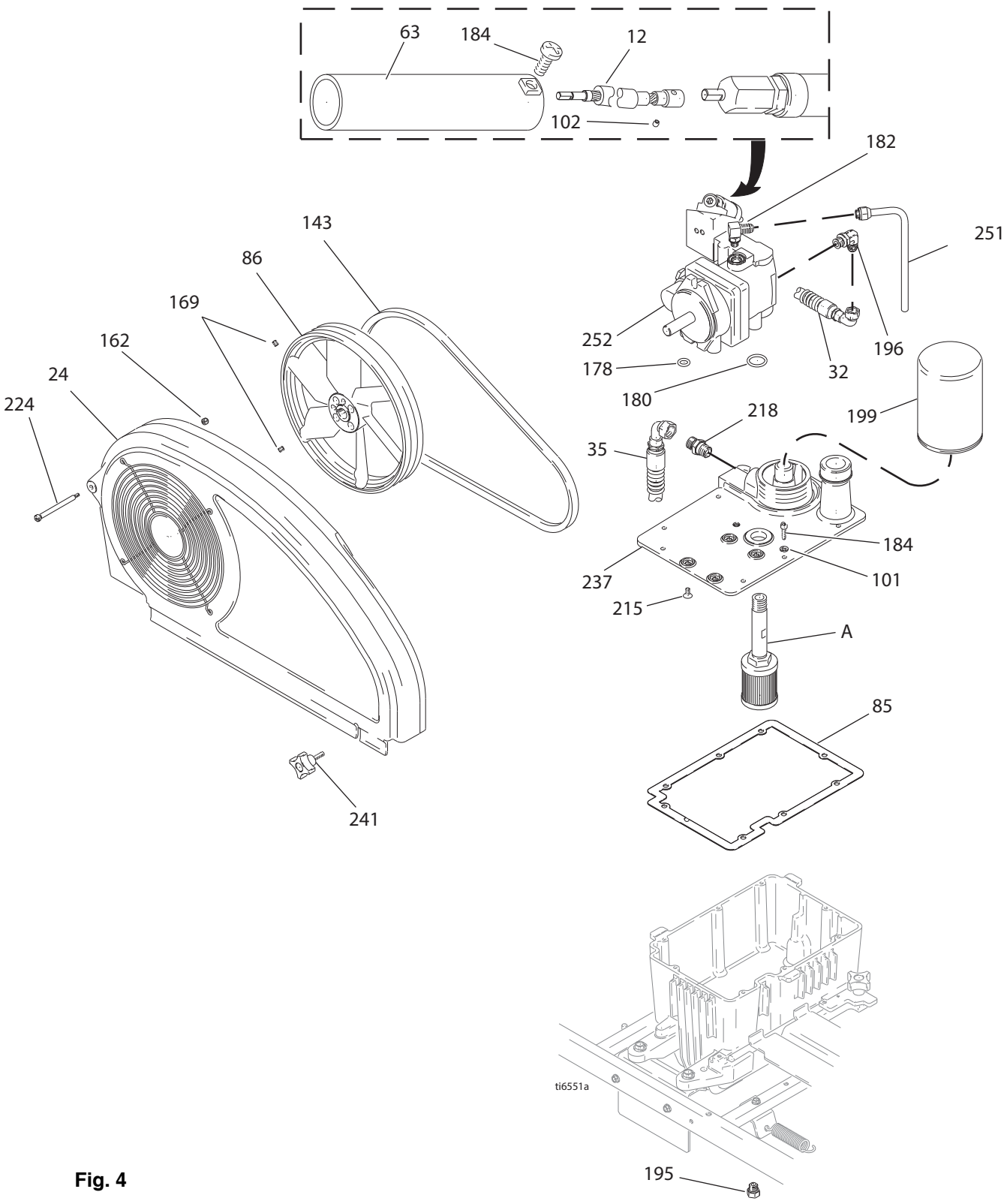
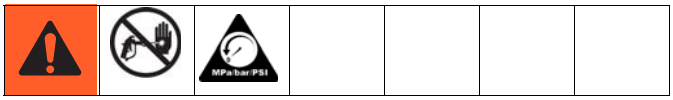

63
184
12
102
182
251
143
86
169
162
24
224
252
178
180
32
196
199
218
35
184
237
101
215
A
85
241
ti6551a
195

Fig. 4

Fan Belt

Removal



1 Relieve pressure; page 7.

2 Fig.5. Loosen belt guard knob (241).

3 Rotate belt guard (24) up.

4 Lift engine (185) up to remove tension on belt (143).

5 Remove belt from fan pulley (86) and fan pulley (87a).

Installation

1 Thread belt (143) around fan pulley (87a) and fan pulley (86).

2 Lower engine (185) to put tension on belt.

3 Rotate belt guard (24) down.

4 Tighten belt guard knob (241).

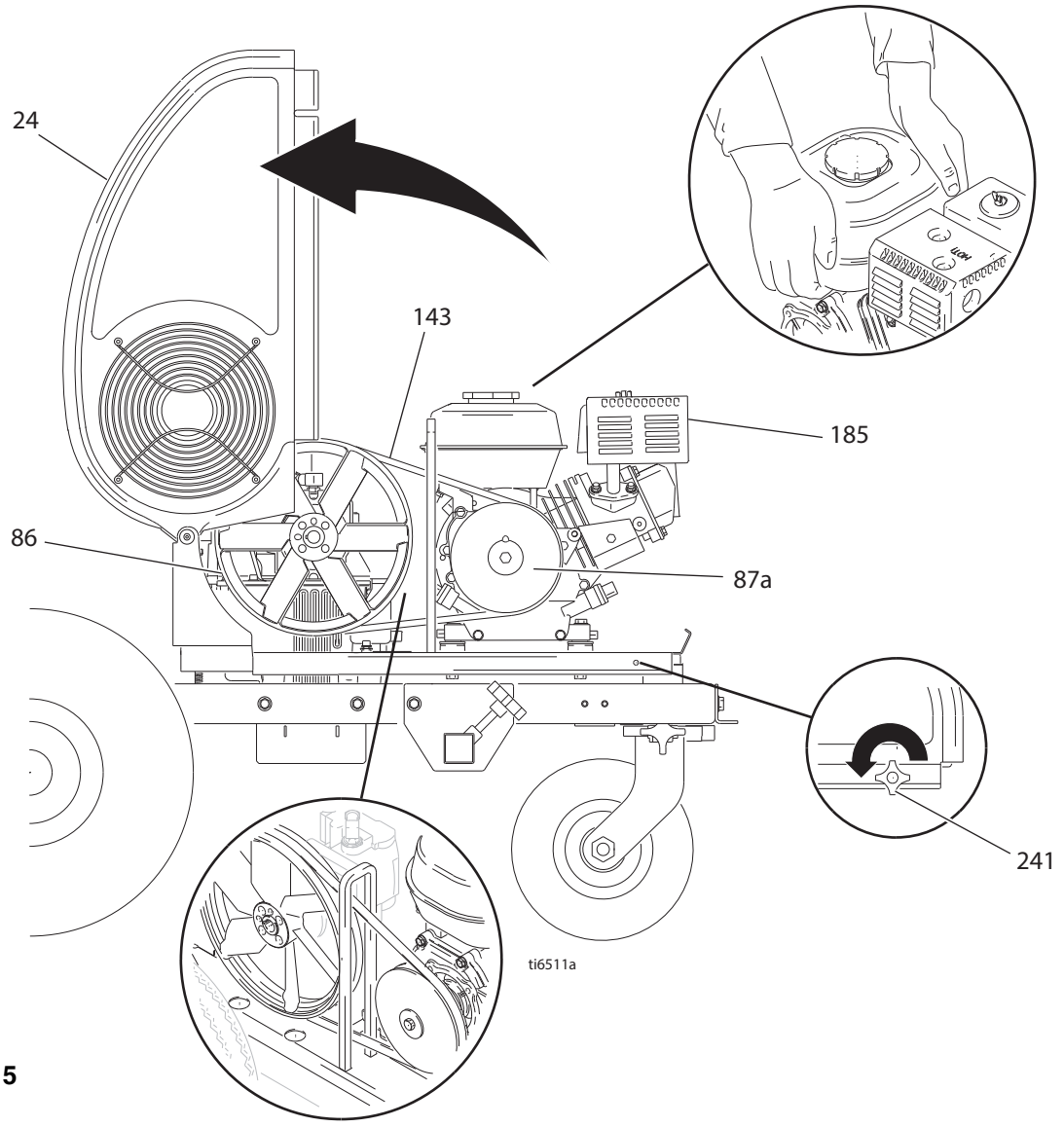
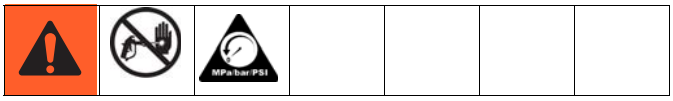


Fig. 5

Engine

Removal



1 Relieve pressure; page 7.

2 Remove throttle cable from engine.

3 Do **Fan Belt, Removal**; page 18.

4 Loosen hand nut (241). Swing bracket (30) out.

5 Fig. 6. Disconnect blue, brown and orange leads from engine (185).

6 Remove engine and rocker plate (87c) from sprayer.

7 Remove four screws (189), washers (114), washers (170) and nuts (118) and remove rocker plate, dampers (59) and washers (114) from engine.

Installation

1 Install rocker plate (87c), dampers (59) and washers (170), washers (114) on engine (185) with four screws (189), washers (170) and nuts (118); torque to 20 ft-lb (27.1 N·m).

2 Install engine and rocker plate (87c) on sprayer.

3 Connect blue, brown and orange leads.

4 Do **Fan Belt, Installation**; page 18.

5 Swing motor retainer bracket (30) in. Tighten hand nut (241).

NOTICE

All service to the engine must be performed by an authorized HONDA dealer.

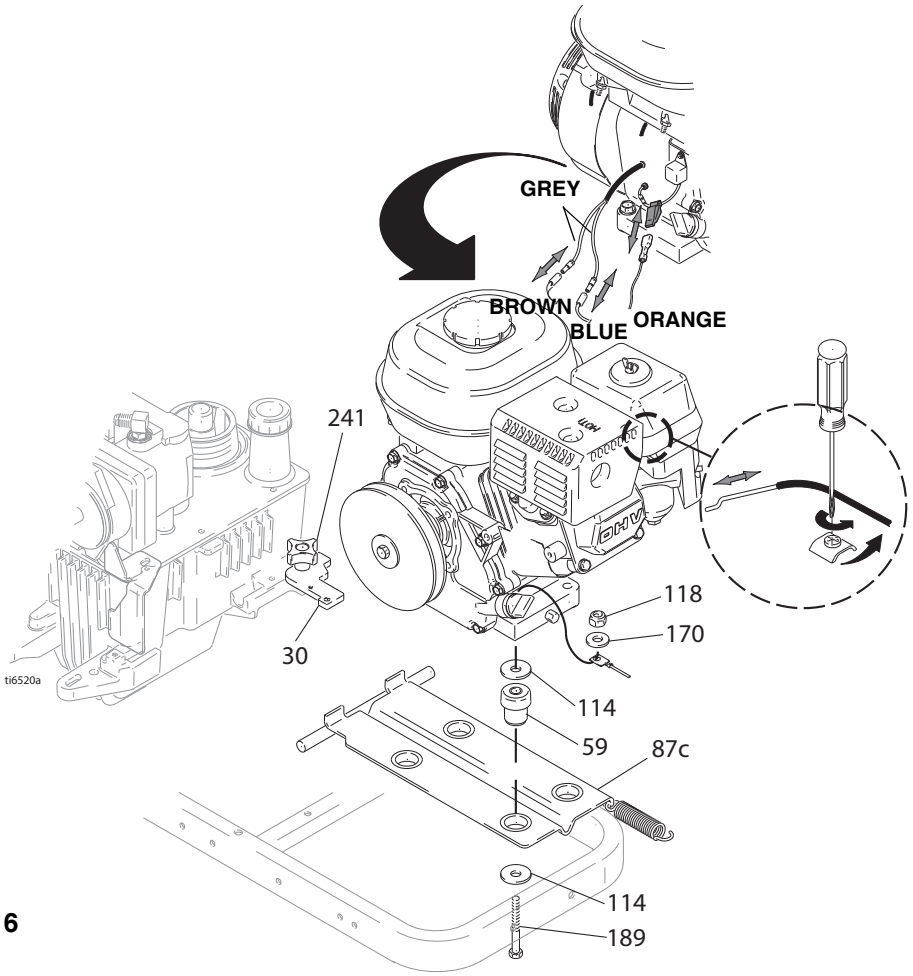
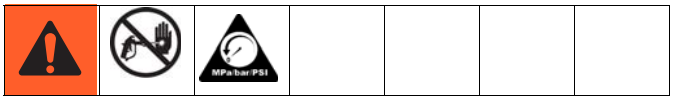


Fig. 6

Hydraulic Motor Yoke

Removal



1 Relieve pressure; page 7.

2 Place drip pan or rags under sprayer to catch hydraulic oil that leaks out during repair.

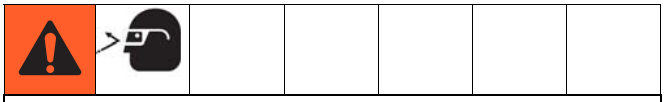
3 Remove pump; page 16.

4 Fig. 7. Remove hydraulic lines (35, 250) from fittings (217) at top left and right side of hydraulic motor.

5 Loosen jam nut (183).

6 Unscrew and remove hydraulic motor cap (25).

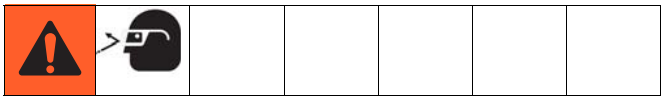
7 Slide piston rod/hydraulic motor cap assembly (A) from hydraulic motor cylinder.



FLYING PARTS HAZARD

Detent spring has high energy potential. If detent spring is released without due care detent spring and balls could fly into the eyes of the disassembler. Wear safety glasses when removing or installing detent spring and balls. Failure to wear safety glasses when removing detent spring could result in eye injury or blindness.

Installation



FLYING PARTS HAZARD

1 Slide piston rod assembly (A) into hydraulic motor cylinder (69).

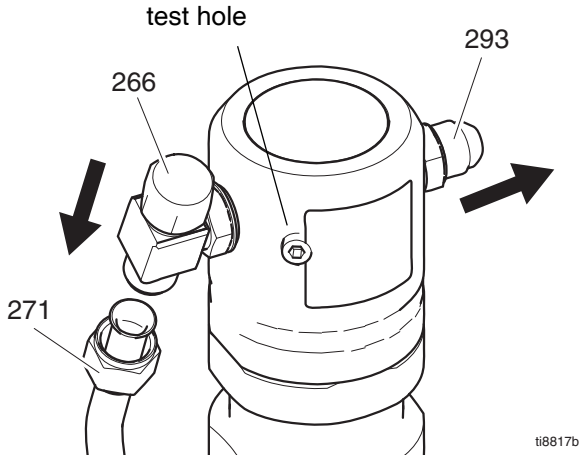
2 Screw down hydraulic motor cap (25) until cap bottoms out. Unscrew hydraulic motor cap until inlet and outlet align with hydraulic line fittings and test hole in hydraulic motor cap points opposite of belt guard (24).

3 Torque jam nut (183) against hydraulic motor cap (25) to 150 ft-lb (17 N·m).

4 Install hydraulic lines (35, 250) to fittings (217) to top left and right side of hydraulic motor per procedure on page 6; torque to 40 ft-lb (54.2 N·m).

5 Install pump, page 24.

6 Start engine and operate pump for 30 seconds. Turn engine OFF. Check hydraulic oil level and fill with Graco hydraulic oil, page 7.



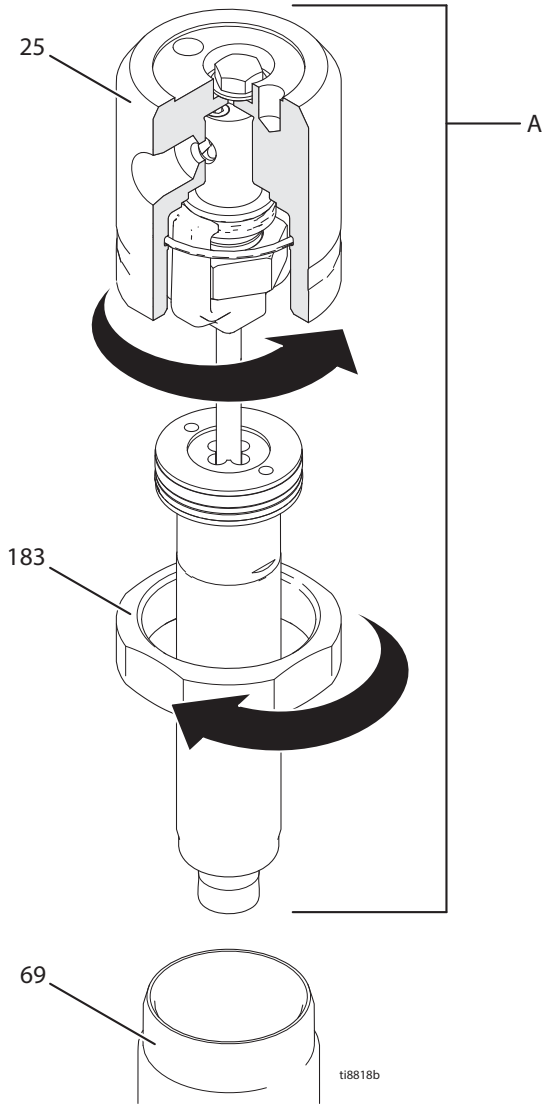


Fig. 7

Oil/Filter Change

Removal

1 Fig. 8. Place drip pan or rags under sprayer to catch hydraulic oil that drains out.

2 Remove drain plug (195). Allow hydraulic oil to drain.

3 Unscrew filter (199) slowly - oil runs into groove and drains out rear.

Installation

1 Install drain plug (195). Apply a light coat of oil to oil filter gasket and install oil filter (199). Tighten oil filter 3/4 turn after gasket contacts base.

2 Fill with 1.25 gallons (4.73 liters) of Graco hydraulic oil 169236 (5 gallons/20 liters) or 207428 (1 gallon/3.8 liters).

3 Check oil level.

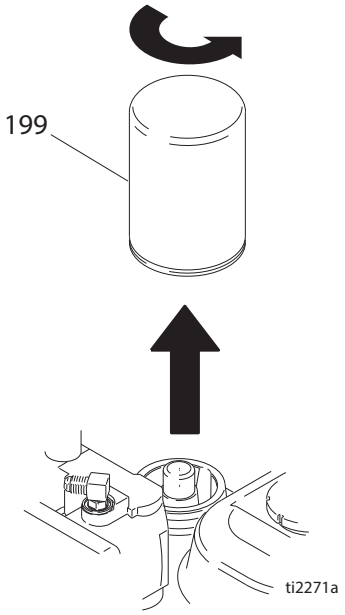


Fig. 8

Gallon Counter

Removal

1 Fig. 9. Disconnect gallon counter cable at back of pressure control and at engine.

2 Remove guard (137) and reed switch from hydraulic motor.

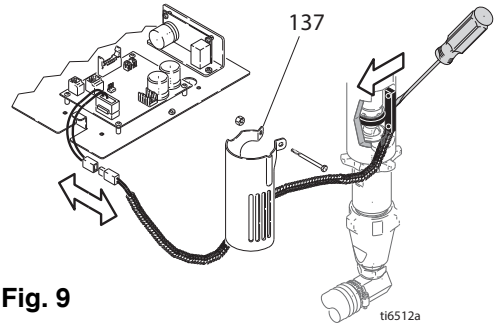


Fig. 9

3 Fig. 11-13. Remove pump.

4 Fig. 10. Remove ring magnet (150).

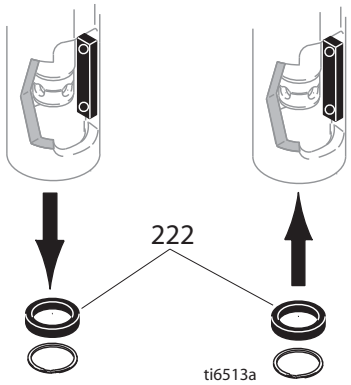


Fig. 10

Installation

1 Fig. 10. Install new ring magnet (222) with dimple marks facing down.

2 Fig. 14-16. Install pump.

3 Install new reed switch and guard (137) on hydraulic motor.

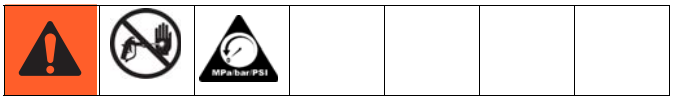
4 Fig. 9. Connect gallon counter cable at back of pressure control and at engine.

Displacement Pump

See manual 309277 for pump repair instructions

Removal

1 Flush pump.



2 Relieve pressure; page 7.

3 Fig. 11. Remove suction tube (34) and hose (26).

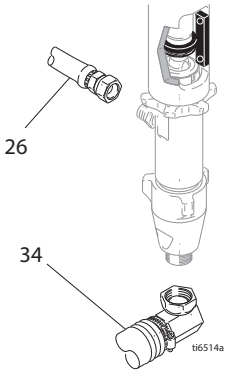


Fig. 11

NOTICE

Gallon counter may error if magnet ring and/or sensor assembly are damaged during disassembly and assembly.

4 Fig. 12. Push magnet ring (222) up. Push retaining spring (194) up. Push out pin (249).

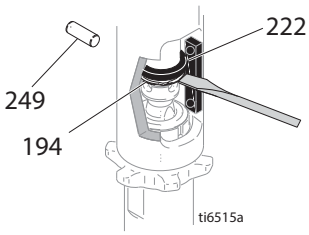


Fig. 12

5 Fig. 13. Loosen jam nut. Unscrew pump.

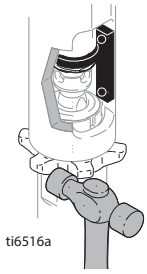


Fig. 13

Installation

NOTICE

If the pump jam nut loosens during operation, the threads of the hydraulic motor manifold will be damaged. Tighten jam nut as specified.

1 Fig. 14. Screw jam nut to bottom of pump threads. Screw pump completely into manifold. Unscrew pump from manifold until pump outlet aligns with hose. Hand tighten jam nut, then tap 1/8 to 1/4 turn with hammer or torque to 200 ft-lb (270 N·m).

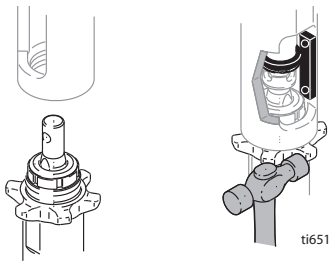
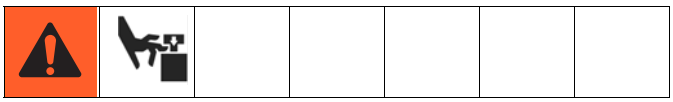


Fig. 14



2 Fig. 15. Slowly pull engine starter rope until pump rod pin hole is aligned with hydraulic rod hole. Fig. 12. Push pin (249) into hole. Push magnet ring (222) down. Push retaining spring (194) into groove.

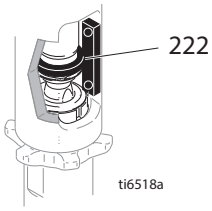


Fig. 15

3 Fill packing nut with Graco TSL.

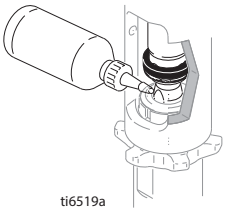
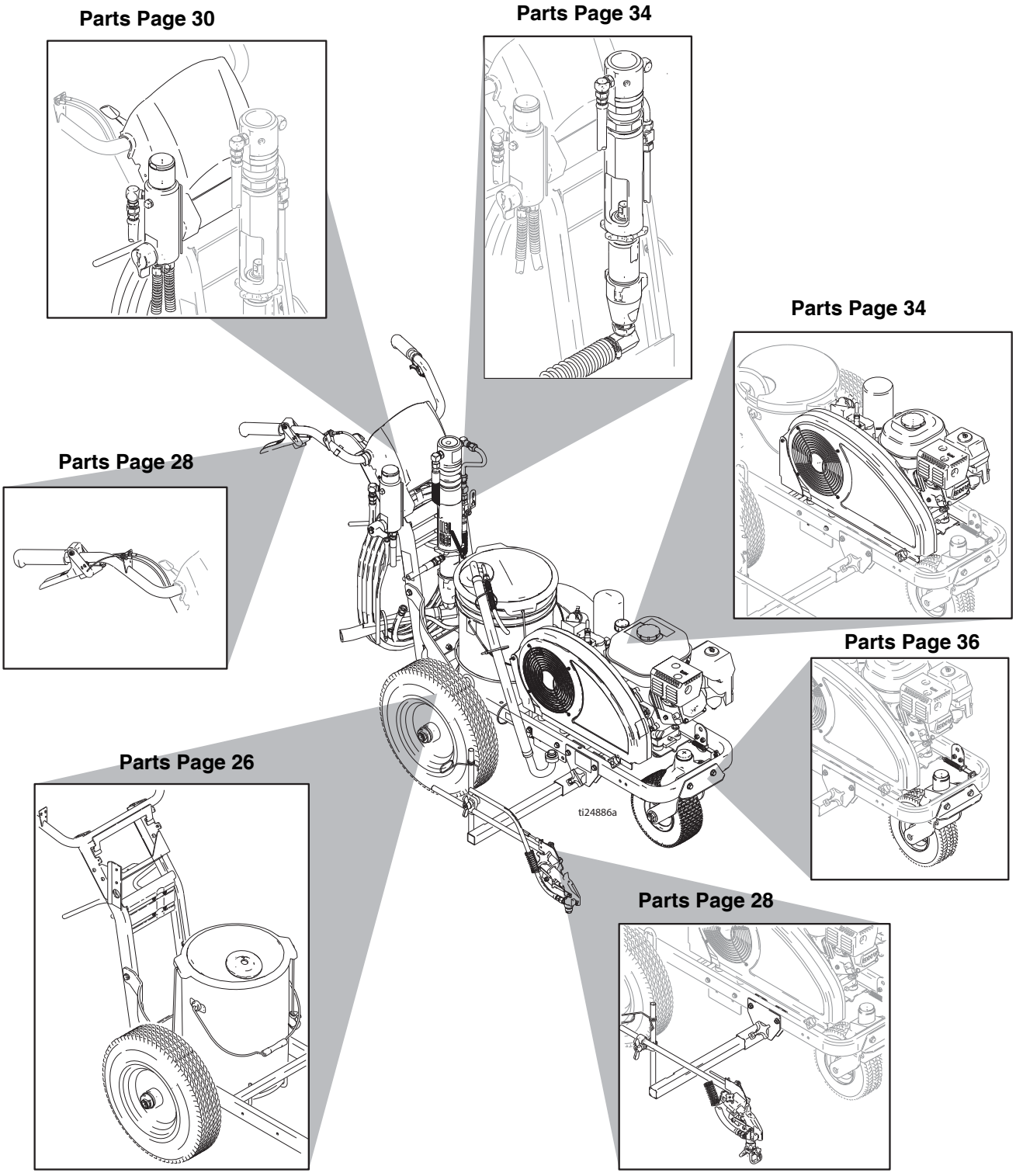


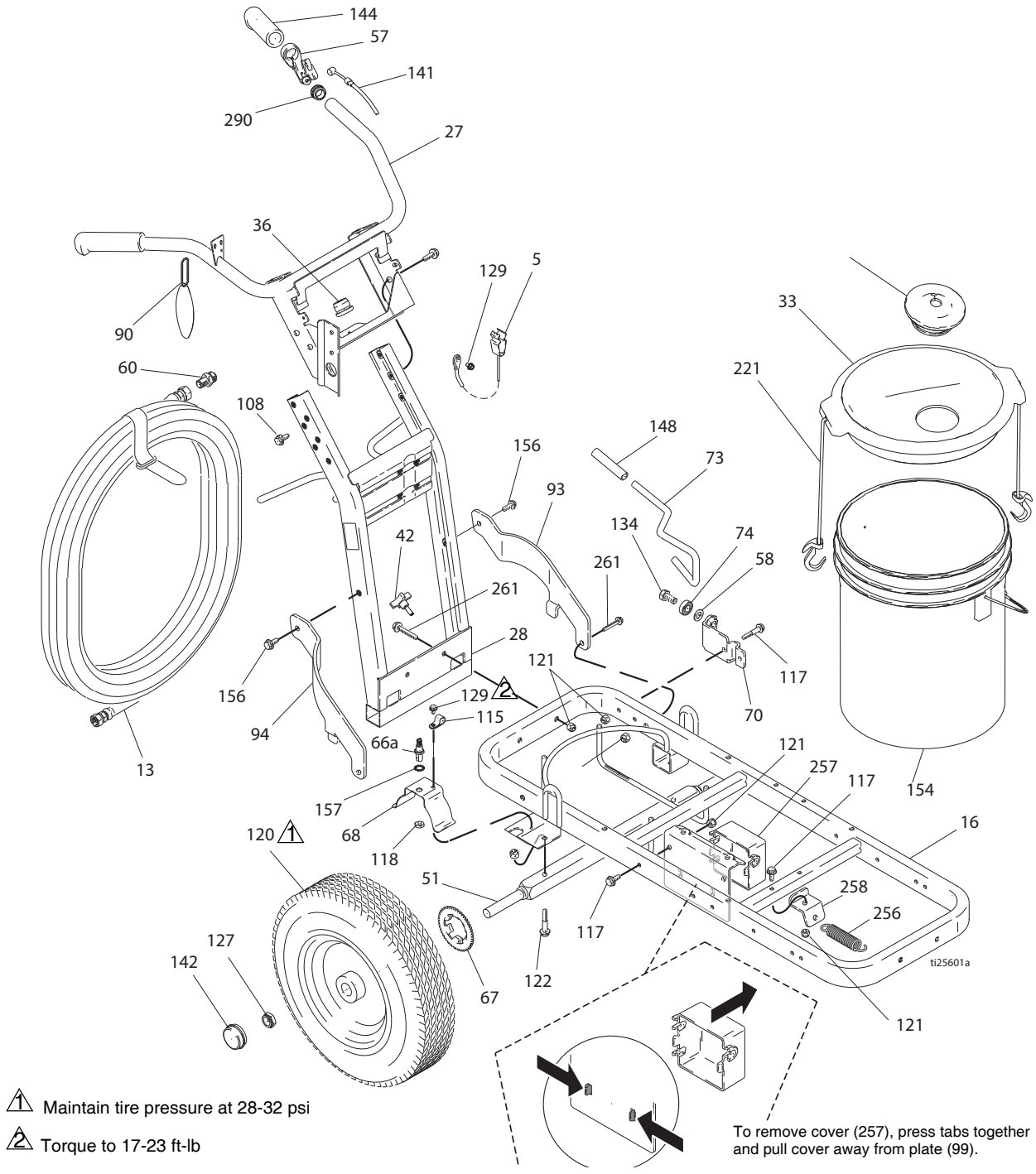
Fig. 16

Notes

Parts - LineLazer IV 200HS



Parts Drawing - LineLazer IV 200HS

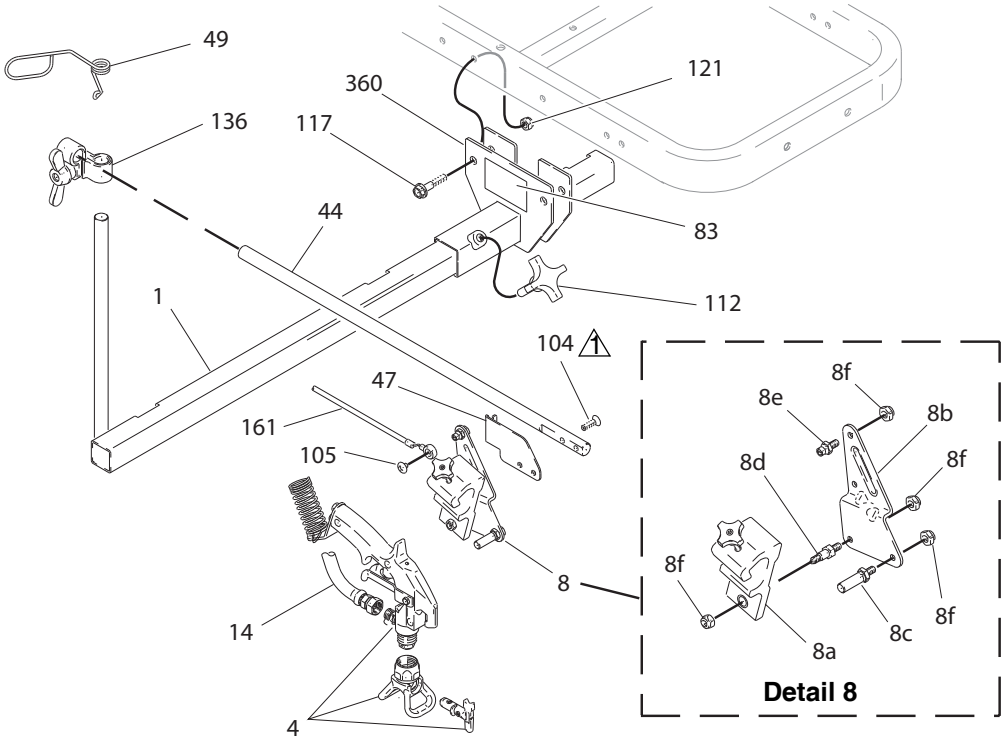


Parts List - LineLazer IV 200HS

Ref.	Part	Description	Qty.
5	237686	CLAMP, grounding assy	1
13	245225	HOSE, 3/8 in. x 50 ft	1
16	287623	FRAME, linestriper	1
27	287417	HANDLE	1
28	287622	SUPPORT, handle, painted	1
33		COVER, pail	
	24U241	(models 248870, 248871, 248872, and 248873), includes 221	1
36	111348	BUSHING, strain relief	1
42	108471	KNOB	1
51	193405	AXLE	1
57	194310	LEVER, actuator	1
58	195134	SPACER, ball guide	1
60	196176	ADAPTER, nipple	1
66	287698	KIT, sensor, distance (includes 66a, 68, 115, 129, 157)	1
66a		SENSOR, distance	1
67		GEAR, signal	1
68	198612	SHIELD, sensor, distance	1
70	198891	BRACKET, mounting	1
73	198930	ROD, brake	1
74	198931	BEARING	1
81	240997	CONDUCTOR, ground (not shown)	1
84▲	15F638	LABEL, warning, fire and skin	1
90	15D849	TAG, Endurance Advantage Program	1
93	15F577	BRACE, left, painted	1
94	15F576	BRACE, right, painted	1
99	15F425	BRACKET, reservoir	1
108	101566	NUT, lock	2
109	102478	STRAP, wiring tie (not shown)	6
115	108868	CLAMP, wire	3
117	110837	SCREW, flange, hex	10
118	110838	NUT, lock	4
120	255162	WHEEL, pneumatic (includes 67)	2
121	111040	NUT, lock, insert, nylock, 5/16	10
122	111194	SCREW, cap flange hd	2
127	112405	NUT, lock	4
129	112798	SCREW, thread forming, hex hd	2
134	113961	SCREW, cap, hex hd	1
141	241445	CABLE, caster	1
142	114648	CAP, dust	3
144	114659	GRIP, handle	2
148	114808	CAP, vinyl	1
154	115077	PAIL, plastic (models 248870, 248871, 248872 and 248873)	1
156	112395	SCREW, cap, flng hd	2
157	116287	WASHER, st, ext, starwasher	1
221	119771	STRAP, cover	2
256	119696	SPRING, extension	1
257	287695	BOX, electric (includes 109)	1
258	15F441	BRACKET, frame	1
261	116780	SCREW, hex hd	4
290	120151	PLUG, tube	2

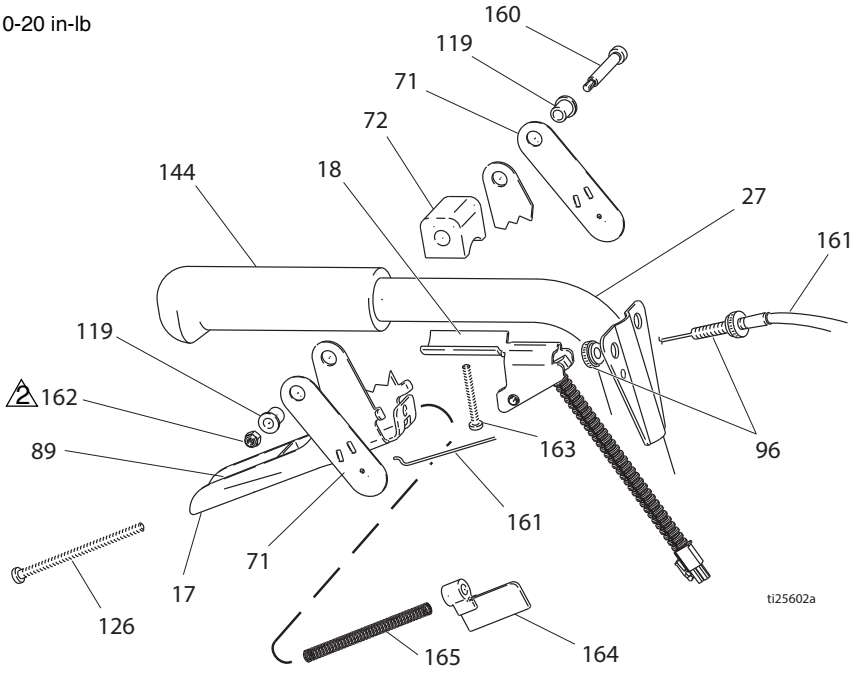
▲ *Replacement Danger and Warning labels, tags, and cards are available at no cost.*

Parts Drawing - LineLazer IV 200HS



1 Torque to 90-110 in-lb

2 Torque to 10-20 in-lb

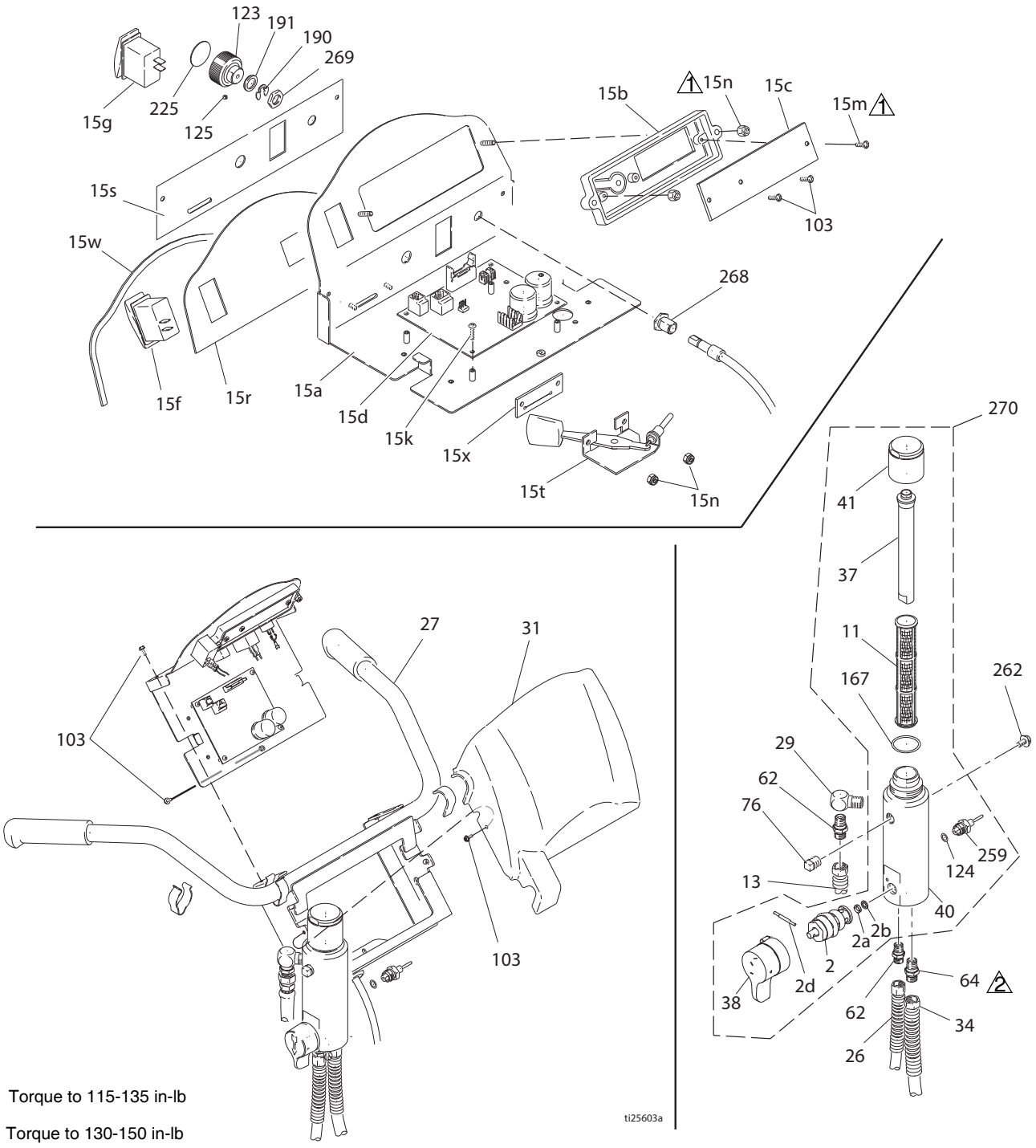


Parts List - LineLazer IV 200HS

Ref.	Part	Description	Qty.
1	224052	BRACKET, support gun	1
4	248157	GUN, flex, basic, includes guard & tip	1
8	287570	KIT, holder, gun	1
8a	287569	HOLDER, gun	1
8b	15F214	LEVER, actuator	1
8c	15F209	STUD, pull, trigger	1
8d	15F210	STUD, pivot	1
8e	15F211	STUD, cable	1
8f	102040	NUT, lock	4
14	245798	HOSE, 1/4 x 7 ft	11
17	245733	KIT, trigger handle repair (includes 89, 126, 164, 165)	1
18	287699	KIT, repair, trigger (includes 18, 166, 168)	1
27	287417	HANDLE	1
28	287622	SUPPORT, handle, painted (not shown)	1
35	287176	HOSE, hydraulic, return (not shown)	1
44	15F212	ARM, support	1
47	15F213	BRACKET, cable	1
49	188135	GUIDE, cable	1
71	198895	PLATE, lever, pivot	2
72	198896	BLOCK, mounting (mach)	1
83▲	15F637	LABEL, skin injection	1
89▲	15A644	LABEL, trigger	1
96	15F624	NUT, cable, gun	2
97	15F377	HARNESS, wiring	1
104	119647	SCREW, cap, socket, flthd	2
105	119648	SCREW, mach tursshd, cross recess	1
109	102478	STRAP, wiring tie	6
112	111145	KNOB, pronged	1
117	110837	SCREW, flange, hex	2
119	111017	BEARING, flange	2
121	111040	NUT, lock	2
126	112381	SCREW, mach, pan hd	1
136	287566	KIT, clamp	1
141	241445	CABLE	1
144	114659	GRIP, handle	2
160	116941	SCREW, shoulder, socket head	1
161	287696	CABLE, includes 96	1
162	116969	NUT, lock	2
163	116973	SCREW, #10 taptite phil	1
164	117268	BRACKET, interrupter	1
165	117269	SPRING	1
168	117317	SCREW, plastite, pan head	2
360	15F389	BRACKET, gun arm	1

▲ *Replacement Danger and Warning labels, tags, and cards are available at no cost.*

Parts Drawing - LineLazer IV 200HS



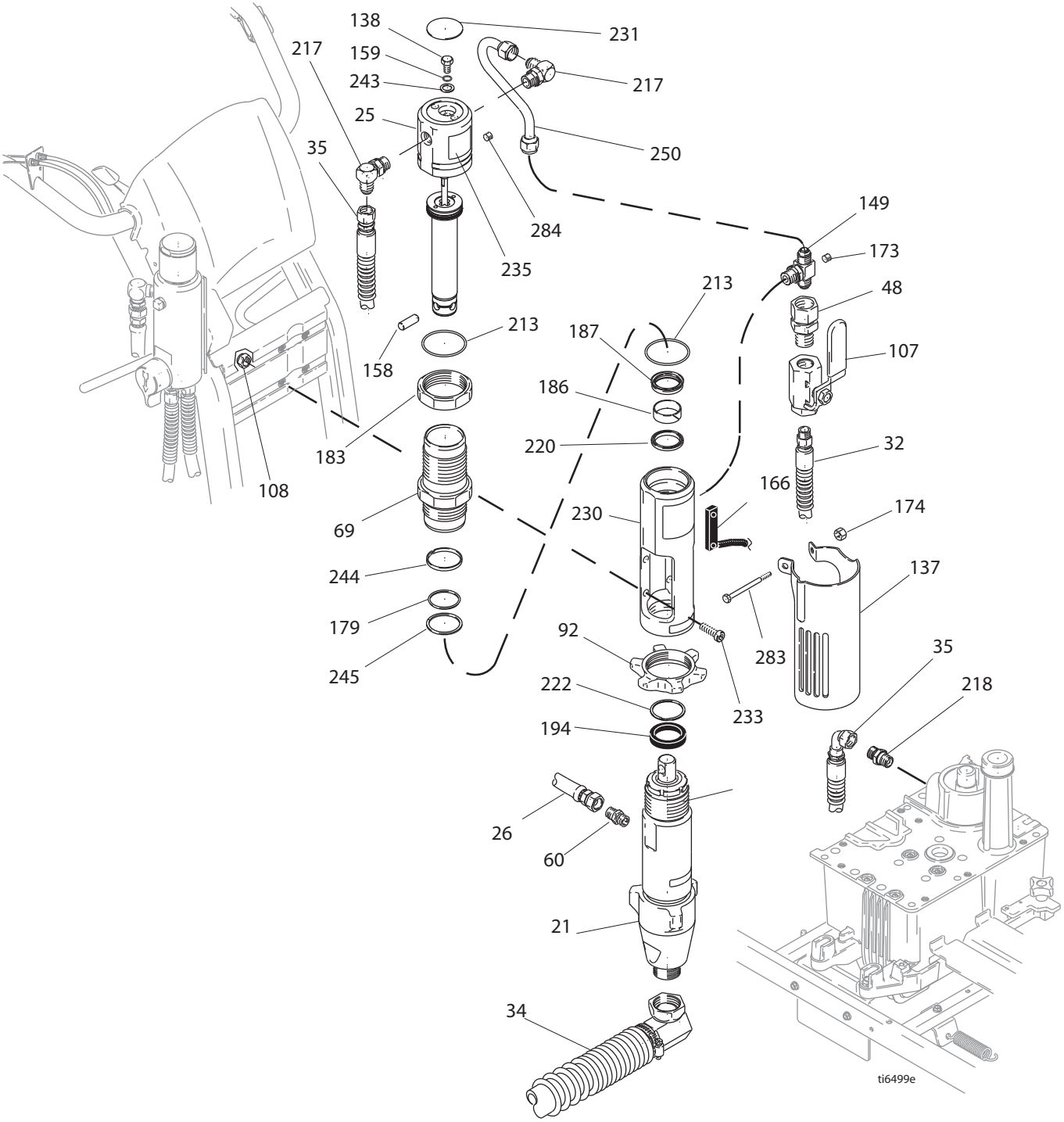
1 Torque to 115-135 in-lb

2 Torque to 130-150 in-lb

Parts List - LineLazer IV 200HS

Ref.	Part	Description	Qty.
2	245103	VAVLE, drain	1
2a	193709	SEAT, valve	1
2b	193710	SEAT, valve	1
2c	116424	NUT, cap	1
2d	114708	SPRING	1
11	244067	FILTER, fluid	1
13	245225	HOSE, 3/8 in. x 50 ft	1
15	287601	CONTROL, plate	1
15a	15F272	PLATE, control	1
15b	287688	BOARD, display (includes 15c, 15m)	1
15c		DISPLAY, board, LCD (included with 15b)	1
15d	287689	CONTROL, board (includes 15k)	1
15f	114954	SWITCH, rocker	1
15g	116752	SWITCH, rocker	1
15k	111839	SCREW, mach, pnh, sems	4
15m	117317	SCREW, plastite, pan head	3
15n	109466	NUT, lock, hex hd	4
15p	116719	SCREW, 3/82 hex washer head	3
15r	15F543	LABEL, control, top	1
15s	15F544	LABEL, control, bottom	1
15t	287692	CONTROL, throttle	1
15u	119736	CLAMP, cable (not shown)	1
15w	15F777	GASKET, control	1
15x	15F776	GASKET, throttle	1
26	245797	HOSE, coupled, 3/8 in.	1
27	287417	HANDLE	1
29	196179	FITTING, elbow, street	2
31	15F589	COVER, control	1
37	15C766	TUBE, diffuser	1
38	15G563	HANDLE	1
40	15H561	MANIFOLD, filter, 3/8 npt	1
41	287285	KIT, repair, filter cap (includes 37, 167)	1
62	196178	ADAPTER, nipple	2
64	196181	FITTING, nipple	1
76	104813	PLUG, pipe	1
103	116719	SCREW, 8/32, hex washer hd	5
123	118359	KNOB, pressure control	1
124	111457	O-RING	1
125	101962	SCREW, set, sch	1
167	117285	O-RING	1
190	115999	RING, retaining	1
191	176754	GLAND, packing, male	1
225	15A464	LABEL, control	1
259	287172	TRANSDUCER, pressure control (includes 124)	1
262	111801	SCREW, cap, hex	2
268	15F710	BUSHING, mount panel	1
269	119775	NUT, panel	1
270	288100	KIT, repair, filter (includes 2, 3, 11, 37, 38, 39, 40, 41, 124, 167, 259)	

Parts Drawing - LineLazer IV 200HS



Parts List - LineLazer IV 200HS

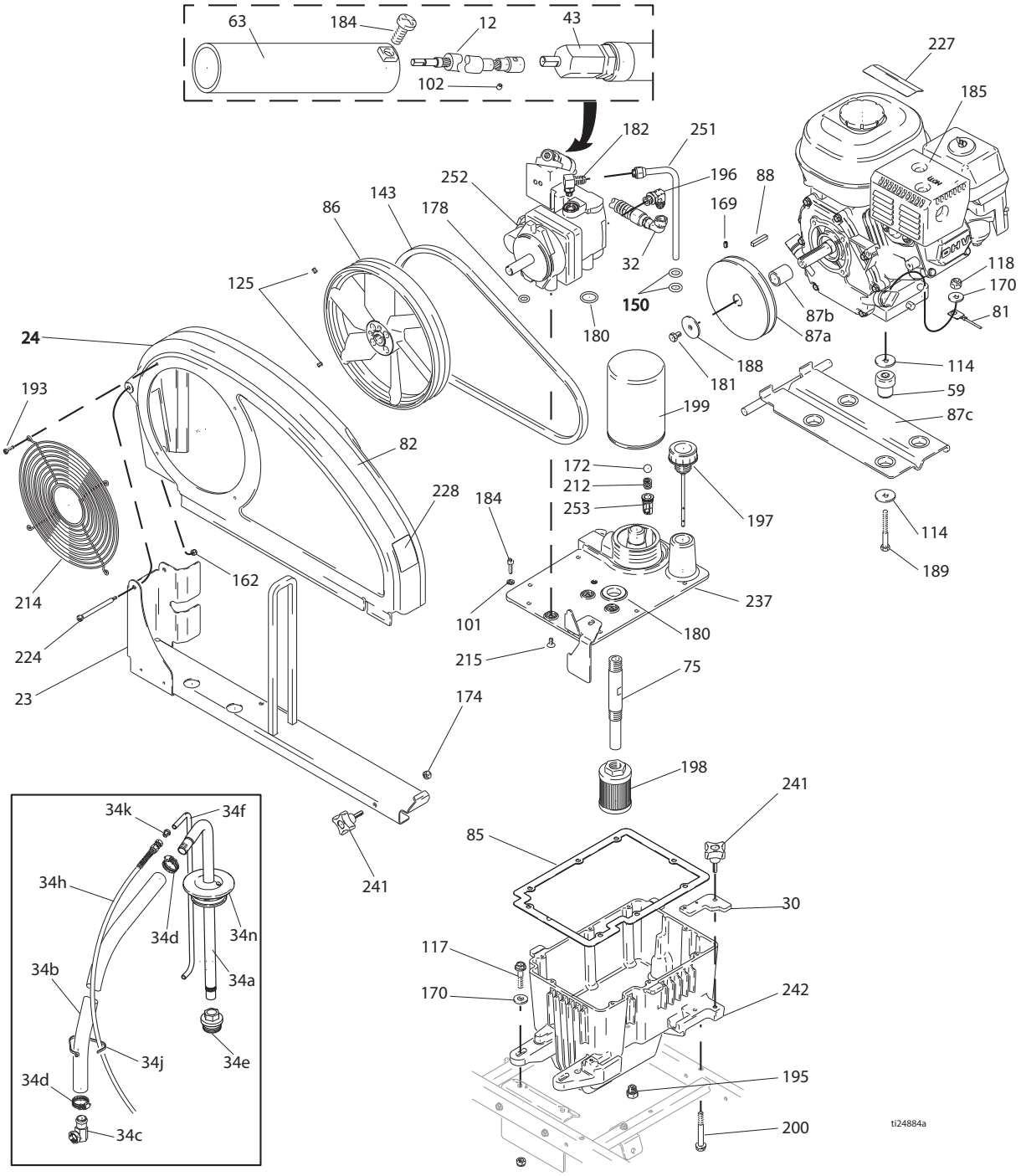
Ref.	Part	Description	Qty.
21	277068	PUMP, displacement (Manual 309277)	1
25~	288754	KIT, trip rod, piston, cap	1
26	245226	HOSE, coupled, 3/8 in.	1
32	287175	HOSE, hydraulic, supply	1
34	287206	HOSE, suction/drain	1
35	287176	HOSE, hydraulic, return	1
48	117328	FITTING, nipple, straight	1
60	196176	ADAPTER, nipple	1
69~	246176	SLEEVE, hydraulic cylinder (includes 213)	1
92	193394	NUT, retaining	1
107	117441	VALVE, ball	1
108	101566	NUT, lock	4
137	15F911	GUARD, pump rod	1
138*~	106276	SCREW, cap, hex hd	1
149	119841	FITTING, tee, branch, str, thd	1
158	116838	PIN, spring	2
159*~	155685	O-RING	1
166	119720	SWITCH, reed w/ connector	2
173	100139	PLUG, pipe	1
174	102040	NUT, lock, hex	2
179*+~	108014	O-RING	1
183~	15A726	NUT, jam	1
186+~	112342	BEARING, rod	1
187+~	112561	PACKING, block	1
194	116551	RING, retaining	1
213*+~	117283	O-RING	2
217	117607	FITTING, elbow, std, thd	2
218	117608	FITTING, nipple, straight	1
220+~	117739	WIPER, rod	1
222	287186	MAGNET, ring	1
230	15A728	MANIFOLD, adapter	1
231*~	15B063	LABEL	1
233	107210	SCREW, cap, socket head	4
235~	15B804	LABEL, Graco logo	1
243*~	178179	WASHER, sealing	1
244*+~	178207	BEARING, piston	1
245*+~	178226	SEAL, piston	1
249	197443	PIN, pump	1
250	15F519	TUBE, hydraulic, supply	1
283	110982	SCREW, cap, hex head	1
284*~	100139	PLUG, pipe, headless	1

* *Parts included in Trip Rod/Piston/Cap Repair Kit 288754 (purchase separately).*

\+ *Parts included in Seal Repair Kit 246174 (purchase separately).*

~ *Parts included in Hydraulic Motor Repair Kit 248021*

Parts Drawing - LineLazer IV 200HS

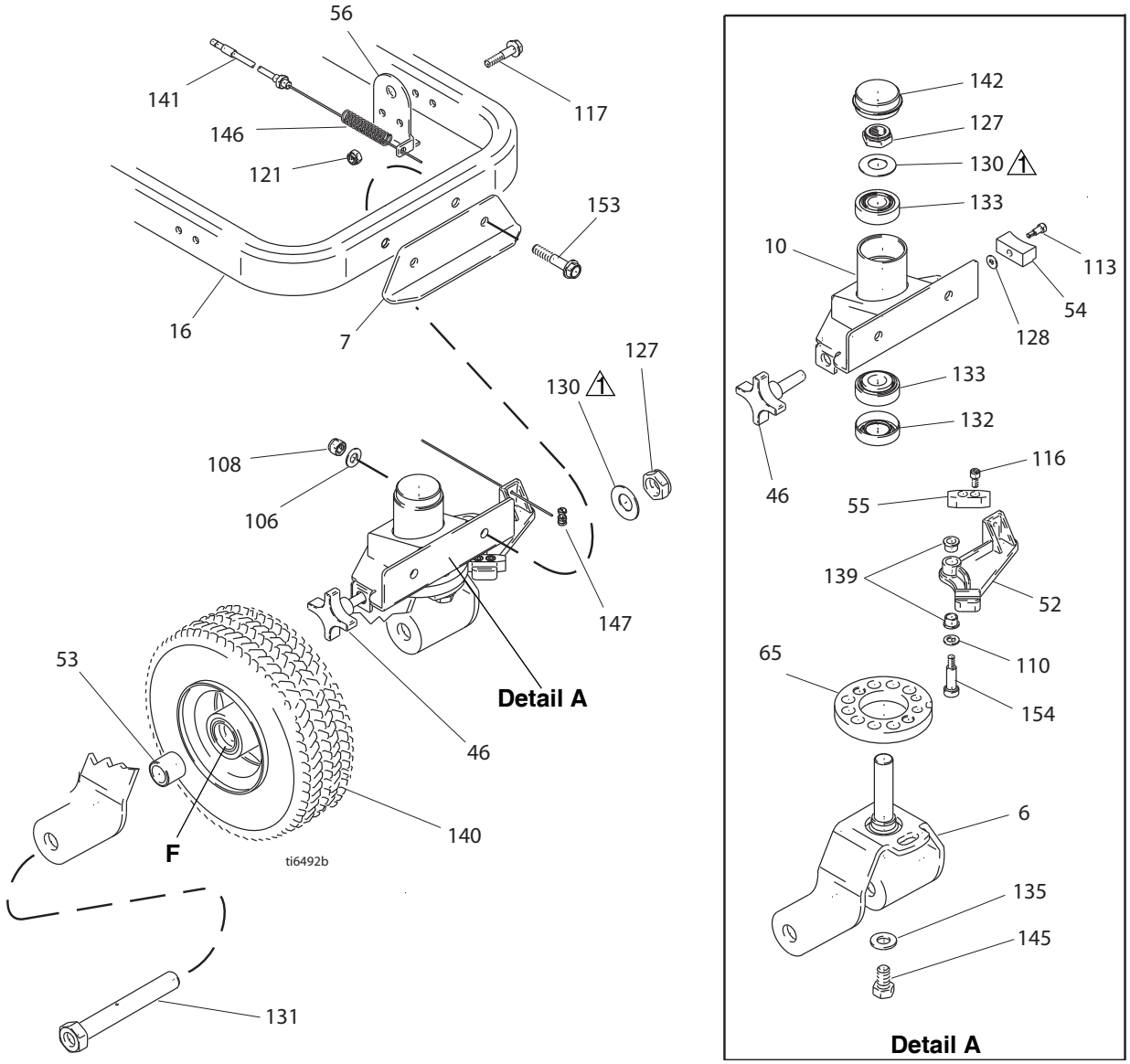


Parts List - LineLazer IV 200HS

Ref.	Part No.	Description	Qty.
12	287687	SHAFT, flexible (includes 125, 190, 191, 268, 269)	1
23	289227	RAIL, belt (includes 162, 174, 224, 241)	1
24	288734	GUARD, belt (includes 162, 193, 214, 224, 228	
30	15E476	BRACKET, retainer, motor	1
32	287175	HOSE, hydraulic supply	1
34	24V064	HOSE, suction/drain	1
34a	15F149	TUBE, suction	1
34b	194306	HOSE, fluid	1
34c	198119	ELBOW, barbed	1
34d	101818	CLAMP, hose	1
34e	181072	STRAINER, inlet	1
34f	16X071	TUBE, drain	1
34h	248008	HOSE, coupled 1/4 in. x 4ft	1
34j	114958	STRAP, tie	7
34k	196180	BUSHING	1
34m	195119	LABEL, warning (not shown)	1
34n	278722	GASKET, pail	1
43	15C400	ADAPTER, pressure control	1
59	15E888	DAPENER, motor mount	4
63	15C958	GUARD, pressure control	1
75	15E587	TUBE, suction	1
81	240997	CONDUCTOR, ground	1
82	15M106	LABEL, brand 200HS	
85	246172	GASKET, reservoir	1
86	16U205	PULLEY, fan	1
87a	15E758	PULLEY, 5.50 diameter	1
87b	15E759	SPACER, shaft, engine	1
87c	15F485	BRACKET, engine mount	1
88	117632	KEY, square, 3/16 x 1.25	1
101	100016	WASHER	8
102	112303	SCREW, ste, socket w/ patch	1
114	108851	WASHER, plain	8
117	110837	SCREW, flange, hex	10
118	110838	NUT, lock	4
125	101962	SCREW, set 1/4-20 x 0.38	2
143	119433	BELT, vee, gripnotch	1
150	154594	O-RING	2
151	114956	TERMINAL, wire tap, insulated	1
162	116969	NUT, lock	2
169	100002	SCREW, set, sch	3
170	100023	WASHER, flat	6
172	100084	BALL, metallic	1
174	102040	NUT, lock	1
178	107188	O-RING	1
180	156401	O-RING	1
181	108842	SCREW, cap, hex head	1
182	110792	ELBOW, male, 90 degree	1
184	112166	SCREW, cap, sch	15
185	116080	ENGINE, gas, 6.5 hp, Honda	1
188	112717	WASHER	1
189	113664	SCREW, flange, hex	4
193	115477	SCREW, mach, torx pan hd	4
195	101754	PLUG, hex head, hydraulic	1
196	116793	FITTING, elbow, hydraulic	1
197	120726	CAP, breather filler	1
198	116919	FILTER, hydraulic, suction	1
199	246173	FILTER, oil, spin on	1
200	120981	SCREW, hex, washhd	2
212	116967	SPRING, compression	1
214	117284	GRILL, fan guard	1
215	117471	SCREW, 1/4-20 flat hd mach	4
218	117608	FITTING, nipple, straight	1
224	119434	SCREW, shoulder, socket head	1
227▲	194126	LABEL, warning	1
228▲	198492	LABEL, warning	1
237	15M057	COVER, reservoir, GH200 LL	1
241	15D862	NUT, hand	2
242	289227	TANK, reservoir	1
251	246167	TUBE, hydraulic, case drain (includes 150)	1
252	287179	PUMP, hydraulic (includes 43, 102, 155, 178, 180, 215, 223, 238, 239, 240)	1
253	198841	RETAINER, ball, press, bypass	1

▲ *Replacement Danger and Warning labels, tags, and cards are available at no cost.*

Parts Drawing - LineLazer IV 200HS



⚠1 Install washers (130) concave surface to inside.

Parts List - LineLazer IV 200HS

Ref.	Part	Description	Qty.
6	240942	SHAFT, fork	1
7	240991	BRACKET, caster, front	1
10*	15G952	BRACKET, hub	1
16	287623	FRAME, linestriper, painted	1
46	181818	KNOB, pronged	1
52	193528	ARM, detent	1
53	193658	SPACER, seal	2
54	193661	JAW	1
55	193662	STOP, wedge	1
56	15F910	BRACKET, cable	1
65	198606	DISK, adjuster	1
106	100731	WASHER	2
108	101566	NUT, lock	2
110	15J603	WASHER, plain	1
113	108483	SCREW, shoulder, soc hd	1
116	110754	SCREW, cap, soc hd	2
117	110837	SCREW, flange, hex	10
121	111040	NUT, lock	2
127	112405	NUT, lock	4
128	112776	WASHER, plain	1
130	112825	SPRING, Belleville	3
131	113471	SCREW, cap, hex hd	1
132*	113484	SEAL, grease	1
133*	113485	BEARING, cup/cone	2
135	113962	WASHER, hardened	1
139	114548	BEARING, bronze	2
140	114549	WHEEL, pneumatic	1
141	241445	CABLE	1
142	114648	CAP, dust	3
145	114681	SCREW, cap, hex hd	1
146	114682	SPRING, compression	1
147	114802	STOP, wire	1
153	114982	SCREW, cap, flng hd	2
154*	120476	BOLT	1

** Parts Included in Bracket Repair Kit 240940 (purchase separately)*

Pressure Control Wiring Diagram

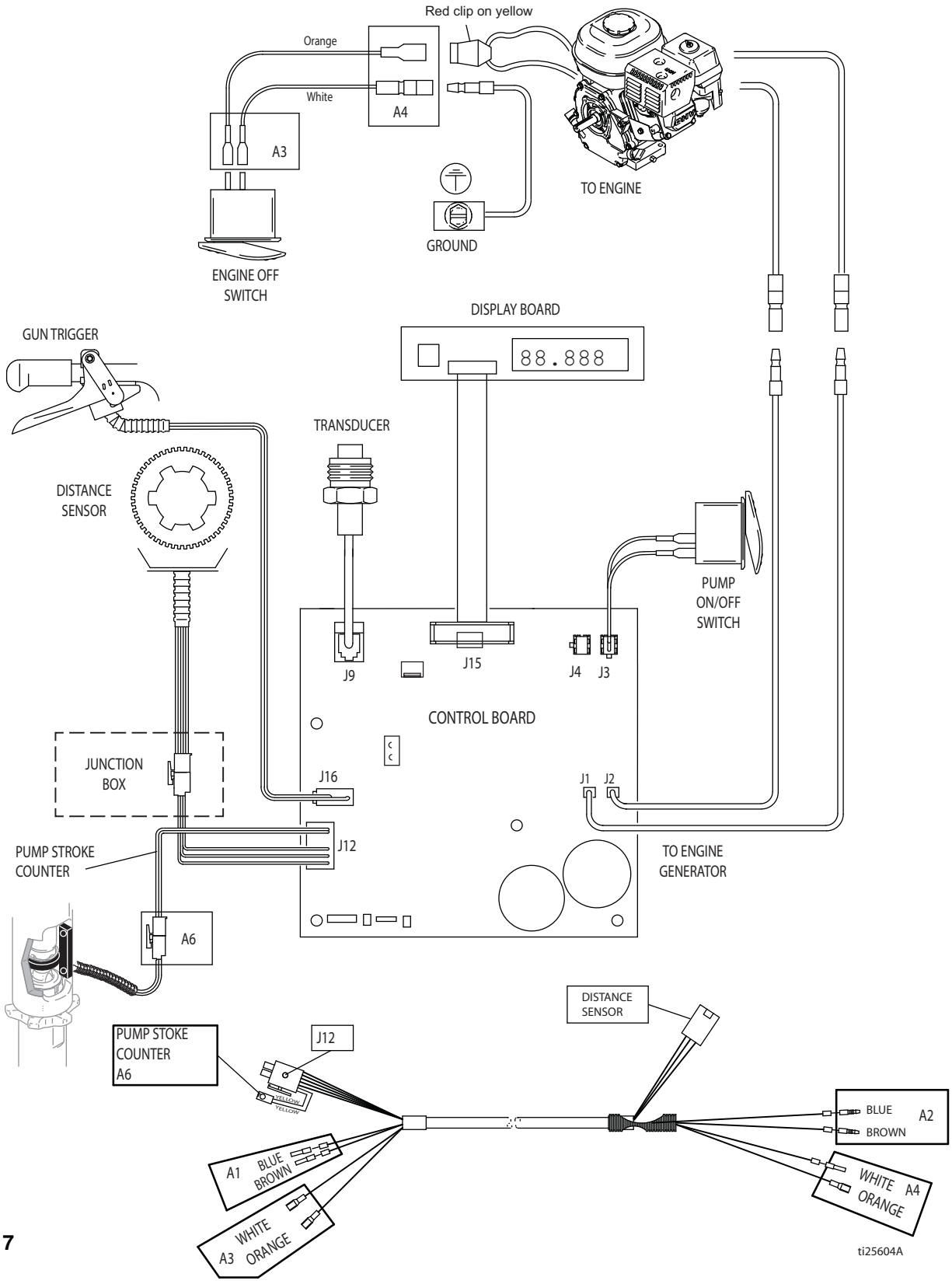


Fig. 17

Technical Data

LineLazer IV 200HS		
Engine	Honda GX200cc	
Engine Generator Output	70w	
	US	**Metric**
Maximum fluid working pressure	3300 psi	(227 bar, 22.7 MPa)
Maximum free-flow delivery	2 gpm	7.6 l/min
Cycles	104 gallons	27.5 liters
Hydraulic reservoir capacity	1.25 gallons	(4.73 liters)
Hydraulic pressure	1825 psi	(124 bar)
Maximum Tip Size		
1 gun	0.046 in.	
2 guns	0.033 in.	
Noise level (dBa)		
Sound power	110 dBa per ISO 3744	
Sound pressure	96 dBa measured at 3.1 feet (1m)	
Vibration level*		
Left Hand	2.90 m/sec^2	
Right Hand	2.83 m/sec^2	
* Vibration measured per ISO 5349 bsed on 8 hr daily exposure		
Inlet/Outlet Sizes		
Inlet paint strainer	16 mesh (1190 micron) stainless steel screen, reusable	
Outlet paint filter	60 mesh (250 micron) stainless steel screen, reusable	
Pump inlet size	1 in. npsm(m)	
Fluid outlet size	3/8 npt(f)	
Dimensions/Weight		
Height	40 in.	101.6 cm
Length	65 in.	165.1 cm
Width	32 in.	81.3 cm
Weight (dry, without packaging)	242 lb	110 kg

Wetted parts...PTFE, Nylon, polyurethane, V-Max™ leather, tungsten carbide, stainless steel, chrome plating, nickel-plated carbon steel, ceramic

Accessories

Must be purchased separately:

GRACO-APPROVED HYDRAULIC OIL

196236 - 5 Gallons (19 liters)
207428 - 1 Gallon (3.8 liters)

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Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

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Original instructions. This manual contains English. MM 311020

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